

One new troglophilous species of the genus *Okileucauge* (Araneae: Tetragnathidae) from Guizhou, China

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Abstract — One new species of the genus *Okileucauge* is described under the name of *O. geminuscavum* from a cave in Panxian County, Guizhou, southwestern China.

Key words — Tetragnathidae, *Okileucauge*, new species, cave, Guizhou, China.

Introduction

Spiders of the family Tetragnathidae are entelegyne and small to very large in size; their legs are usually long and thin, whilst shape of abdomen varies from long and thin to almost globular. In some genera, chelicerae are frequently markedly modified, often long, curved and swollen, and carry large teeth on inner margin (Murphy & Murphy 2000). Members of this family are orb weaving spiders and often found in vegetation near fresh water, such as lakes, small streams and rivers (Dimitrov *et al.* 2008). They are distributed worldwide with 48 genera and 937 species recognized (Platnick 2008) and 118 species belonging to 22 genera are known in China.

Tanikawa (2001) established the genus *Okileucauge* comprising only one species, *O. sasakii*, from Japan. This genus was revised in detail mainly in China with descriptions of five new species by Zhu *et al.* (2003). Representatives of this group are diagnosed by following characters: 1) femur IV without a row of trichobothria, 2) epigynum with a deep cavity, 3) spermatheca divided into three chambers, 4) embolus wrapped by conductor, 5) male palp without metine embolic apophysis, 6) within tegulum of male palp, course of reservoir with switchback. Included species are as follows (in alphabetical order): *O. hainan* Zhu, Song & Zhang, 2003; *O. nigricauda* Zhu, Song & Zhang, 2003; *O. sasakii* Tanikawa, 2001; *O. tanikawai* Zhu, Song & Zhang, 2003; *O. tibet* Zhu, Song & Zhang, 2003; *O. yinae* Zhu, Song & Zhang, 2003. The group is distributed in Japan and China.

The purpose of this contribution is to describe one new species of *Okileucauge* from a cave in Panxian County, Guizhou, southwestern China. This is the first report of *Okileucauge* from cave.

Materials and methods

All measurements were made at the widest or longest

point of a structure and given in millimetres. Vulvae were carefully excised, placed in temporary mounts and cleared in warm solution of KOH. Drawings of figures were made under a Spencer Buffalo microscope and a Tech XTL- α stereomicroscope equipped with an Abbe drawing device. Taxonomic descriptions and terminology follow Tanikawa (2001) and Zhu *et al.* (2003).

The acronyms and abbreviations used in the text and figures are as follows: ALE: anterior lateral eye; AME: anterior median eye; C: conductor; E: embolus; EC: epigynal deep cavity; EPC: epigynal posteriorly situated cavity; FC: the first chamber of spermatheca; FD: fertilization duct; MT: large tooth on fang furrow of male chelicera; PLE: posterior lateral eye; PME: posterior median eye; SC: the second chamber of spermatheca; TC: the third chamber of spermatheca; TS: switchback within tegulum of male palp.

Taxonomy

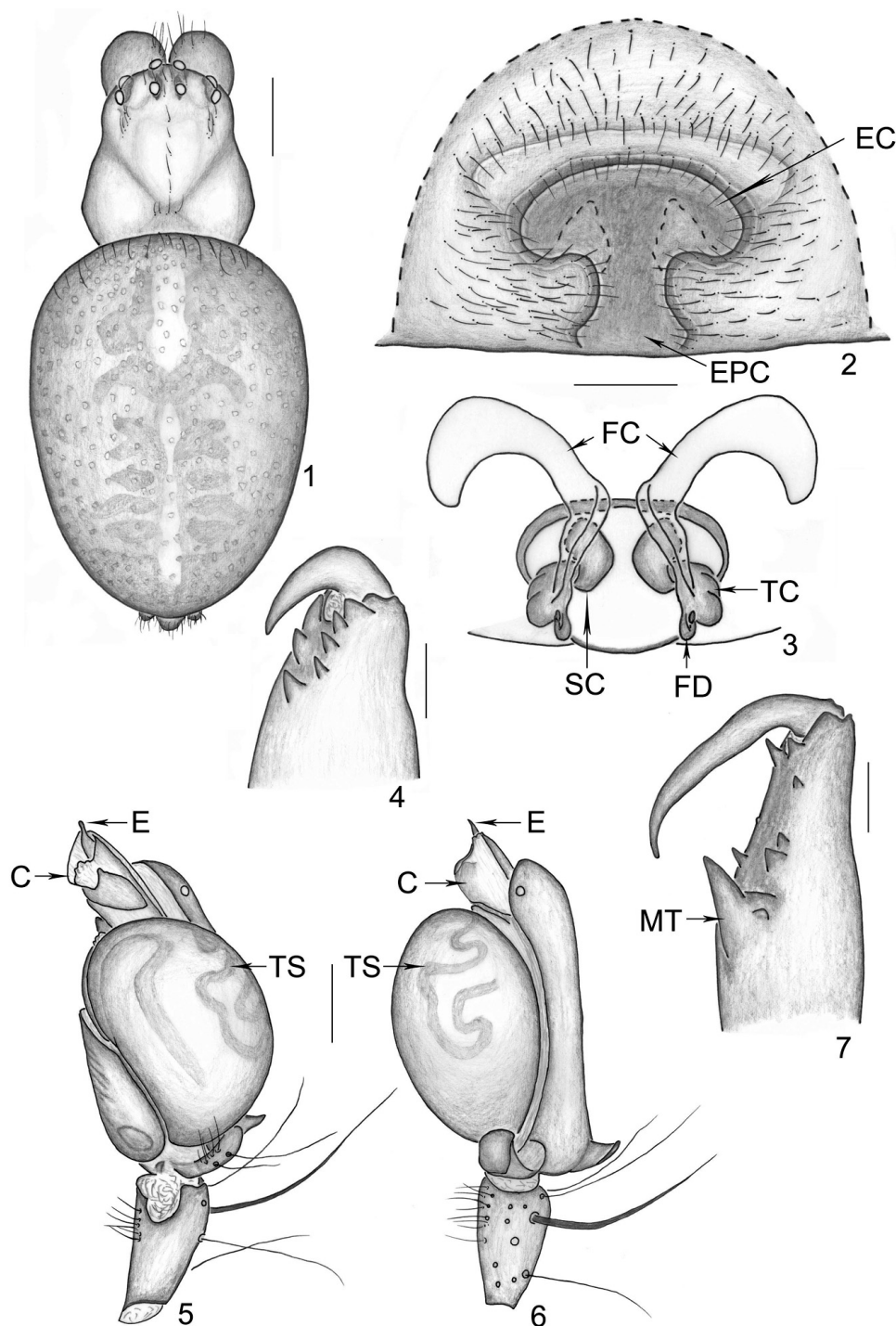
Family Tetragnathidae Menge, 1866

Genus *Okileucauge* Tanikawa, 2001

Okileucauge geminuscavum sp. nov.
(Figs. 1–7)

Type material. Holotype: Female from Biyun Cave (25°46.5'N, 104°38.3'E, 1544 metres above sea-level), Chenguan town, Panxian County, Guizhou province, 11 January 2008, collected by H. M. Chen. Paratypes: Five females and two males, data are same as holotype. The specimens are deposited in the Museum of Hebei University, Baoding, China (MHB).

Diagnosis. The new species is distinguished from the known species of the genus other than *O. tanikawai* by the shape of epigynum (ventral and dorsal views, Figs. 2–3) and TS (Figs. 5, 7); and from *O. tanikawai* by the epigynum with a cavity posteriorly situated (Fig. 2) and without a pair of apophyses in posterior part, the clear boundary between SC and TC (Fig. 3), and the male palpal tibia with one



Figs. 1–7. *Okileucauge geminuscavum* sp. nov., female holotype and male paratype. — 1, female carapace and abdomen, dorsal view; 2, female genitalia, ventral view; 3, female genitalia, dorsal view; 4, female left chelicera, retrolateral view; 5, male left palp, prolateral view; 6, male left palp, retrolateral view; 7, male left chelicera, retrolateral view. Scale bar: 1, 1 mm; 2–3, 0.2 mm; 4, 7, 0.4 mm; 5–6, 0.3 mm.

macroseta and without plumose hair.

Description. Female (holotype): Total length 7.04. Carapace length 5.71, width 4.39. Sternum length 1.38, width 1.28. Abdomen length 4.59, width 3.57. Eye sizes and interdistances: AME 0.23, ALE 0.13, PME 0.15, PLE 0.15, AME-AME 0.15, AME-ALE 0.20, PME-PME 0.15, PME-PLP 0.35. Leg formula: 1243. Length of legs (femur +

patella + tibia + metatarsus + tarsus = total): I, $4.74 + 1.28 + 4.08 + 5.20 + 1.43 = 16.73$; II, $3.93 + 1.02 + 2.35 + 3.32 + 1.02 = 11.63$; III, $1.94 + 0.66 + 1.12 + 1.58 + 0.82 = 6.12$; IV, $3.32 + 0.82 + 2.04 + 2.65 + 0.82 = 9.64$.

Median ocular area slightly narrow posteriorly, lateral eyes contiguous. Carapace yellowish, with dark margins and dark markings converging on thoracic fovea. Chelicera

with three anterior teeth and four posterior teeth. Sternum brown, with dark hairs. Abdomen subglobose; dorsum grayish green, speckled silverly, with black markings and grayish green medial longitudinal bar; venter brown. Legs yellowish, with distinct spots and long spines.

Male (one of paratypes): Similar in overall appearance to female, but slightly smaller and darker. Total length 5.20. Carapace length 2.81, width 1.89. Sternum length 1.40, width 1.28. Abdomen length 3.21, width 2.30. Eye sizes and interdistances: AME 0.20, ALE 0.20, PME 0.18, PLE 0.15, AME-AME 0.10, AME-ALE 0.23, PME-PME 0.13, PME-PLE 0.35. Leg formula: 1234. Length of legs (femur + patella + tibia + metatarsus + tarsus = total): I, $5.10 + 1.07 + 4.64 + 5.81 + 1.38 = 18.00$; II, $3.77 + 0.97 + 2.965 + 3.77 + 1.07 = 12.55$; III, $2.09 + 0.46 + 1.07 + 1.58 + 0.61 = 5.81$; IV, $3.77 + 0.97 + 2.96 + 3.77 + 1.07 = 12.55$.

Palp: tibia with one macroseta, cymbium with a projection as well as paracymbium, weakly sclerotized conductor wraps embolus; reservoir in tegulum with switchback. Chelicera with two anterior teeth and four posterior teeth, and a big tooth at innermost part of posterior margin of fang furrow (Fig. 7).

Distribution. Known only from the type locality.

Etymology. The specific name is from Latin *geminus* (double) and *cavum* (cavity), referring to the structure of epigynum with two cavities.

Natural history. Specimens of this species were

collected from entrance zone of the cave (light zone). A river containing a great amount of waste water from towns flows into the cave opening from its exterior and along the cave forward. Spiders were found on the cave wall.

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